

**Elucidation of the mechanisms of hair graying: an approach for tissue ageing****Emi K. Nishimura**

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**【Outline of research】**

Hair graying is one of the most apparent signs of ageing and usually starts gradually after adolescence. We previously identified melanocyte stem cells ( Nishimura EK et al. Nature 2002 ) and have demonstrated that melanocyte stem cells undergo qualitative and quantitative changes associated with ageing and this incomplete maintenance of melanocyte stem cells can cause hair graying (Nishimura EK et al., Science, 2005). These findings indicate that stem cell depletion is directly involved in at least one ageing phenotype. Taking advantage of melanocyte stem cell visualization in mouse skin and visible hair color changes during ageing process, we will elucidate the mechanism for skin tissue ageing and develop an anti-ageing strategy.

**【Expected results】**

We will elucidate the molecular and cellular mechanisms underlying tissue ageing by focusing on qualitative changes in tissue stem cells. Based on the above approach and results, we will also aim for the development of an anti-ageing strategy.

**【References】**

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**【 Term of project 】** FY2007 - 2011**【 Budget allocation 】** 21,500,000 yen  
(2007 direct cost)**【Homepage address】**<http://scm.w3.kanazawa-u.ac.jp/>